

SUPERCOOLED METAL FOR DECORATIVE MATERIAL AND ALLOY FOR SUPERCOOLED METAL

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Applicant: TANAKA PRECIOUS METAL IND

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Abstract of JP2000256811

PROBLEM TO BE SOLVED: To produce a supercooled metal high in hardness, excellent in luster and high in workability by preparing an alloy composed of specified ratios of Pt, Pd, Cu and P, melting it and thereafter executing cooling at a specified rate. SOLUTION: An alloy, which is composed of Pt-Pd-Cu-P, and in which the ratio of each component is controlled to 1 to 70 at.% Pt, 5 to 50 at.% Pd, 5 to 50 at.% Cu and 5 to 30 at.% P, is prepd., the alloy is melted and is thereafter cooled at 10⁻¹ to 10⁻² deg. C/sec to prepare supercooled metal for a decorative material. When this supercooled metal is made into a final product by casting, it is made into the hard one having hardness as it is, and in the case machining is applied thereto, though cutting at ordinary temp. can be executed, plastic working is hard to be executed since it is too hard, but, when heating is executed to a temp. between glass transition temp. to crystallization temp., it exhibits superplasticity and is made easy to be worked. Moreover, at the time of producing this supercooled metal, each component is used desirably as powdery metal for accelerating the melting.

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